REMARKS

The rejection of claims 16-24 under 35 USC 112, first paragraph as failing to comply with the written description requirement is respectfully traversed. In the original version of claim 16, the process was identified as being carried out by a computer. This was deleted from claim 16 in the amendment filed on August 8, 2005 to overcome the rejection under 35 USC 112, first paragraph in that the software used in the computer was readily programmable by any programmer skilled in the art and that the software was not the subject of the invention. However, since the Examiner has alleged that without reciting the use of a computer to carry out the process, claim 1 is of a scope not supported by the original disclosure. Applicant has elected to re-insert the expression "using the computer to carry out the process" to overcome this rejection.

The explanation of the process of the subject invention is supported in the specification starting at the bottom of page 7 through the bottom of page 8. The description for simulating a response to detector D based upon Figures 1 and 2 and the calculation rates are explained in great detail starting on page 9 with the loop isotope (i) defined by the mathematical equations set forth on lines 5 through 13 and the loop for energy (j) defined by the mathematical relationship set forth on lines 15-22. The calculation for the loop for the attenuator element (k) is defined by mathematical equations set forth on page 9, line 24 through page 10, line 10. The calculation for the end loop attenuator element (k) is defined by the mathematical equations set forth on page 10, line 11 through line 23 and the start loop procedure is set forth on page 10 starting on line 24 through page 11, line 18. Additional description for calculating values for the Compton front scattering are set forth starting on page 12, lines 10 and 18 and for computing Compton background values are recited on page 12, lines 20 and 25 and on page 13, lines 1 and 10, respectively.

The above formulas starting on page 9 through page 13 define the description for the calculation loops used to simulate the response of the detector D for a nuclear fuel pellet formed by a uranium matrix containing several plutonium isotopes.

However, the process in accordance with claim 16 is not limited to the specific formulaes set forth in the specification.

The Examiner indicates that claims 16-23 are enabling for developing the simulated response of the detector using a computer but not without a computer. Accordingly, the re-insertion of the phrase "using a computer to carry out the process" renders claims 16-23 compatible with the specification and enables any person skilled in the art to which it pertains along with which it is mostly connected to make and use the invention commensurate in scope with the claims.

The Examiner has objected to the term "to individually reproduce" as not being adequately supported in the specification. Accordingly, applicant has deleted this expression and has substituted the expression -- for reproducing -- which is supported in the specification.

Applicant has further amended claim 16 deleting the terms "modeling of" and substituting -- which model -- to further clarify any potential misunderstanding of this feature of the claim.

Claim 16 as amended is now believed to be definite and complete, and to satisfy all the requirements of 35 USC 112, second paragraph.

The rejection of claims 16-18 and 20-23 under 35 USC 103(a) as being unpatentable over either Ahmed, et al (U.S. Patent 4,822,552) or Schoenig, et al (U.S. Patent 4,902,467) in view of Bronson, et al (U.S. Patent 6,228,664 B1) is respectfully traversed.

The Examiner makes the statement that both Ahmed, et al and Schoenig, et al disclose applicant's claimed invention except for the step of the calibration of the detector by the simulation method. This is false and is indicative of the Examiner's misunderstanding of the subject invention. Applicant is only required to provide a description of the invention to enable those skilled in the art to practice the invention. It is not relevant whether the Examiner would be able to practice the invention based upon the description.

Ahmed discloses a method for passively gamma scanning a nuclear fuel rod. There is no teaching whatsoever in Ahmed regarding how to simulate the response of a radiation detector. The Examiner is asked to point out what paragraphs in Ahmed he is relying on. Schoenig discloses a non-destructive testing of nuclear fuel rods. Schoenig fails to teach how to simulatr the response of a radiation detector. Accordingly, how is it possible for the Examiner to make the statement that either Ahmed, et al or Schoenig disclose applicant's claims for simulating the response of a radiation detector. In fact, the Examiner admits that Ahmed teaches the method directed specifically to the inspection of nuclear fuel rods scanned using scintillators in a linear side by side arrangement. Schoenig and Ahmed, et al do not teach the steps of memorizing the radioactive emission spectra representative of radioelements or mixes of radioelements and do not teach the step of determining the detection characteristics of the detector in the form of coefficients inclusive of data modeling thickness or the step of choosing the radioelements and mixes of radioelements from the radioactive emissions spectra representative of the contents of the objects. Instead, the Examiner validates his conclusion by stating that detectors in either Ahmed, et al or Schoenig, et al must inherently be calibrated prior to their use for inspection/testing of the fuel rods. However, the Examiner admits that neither reference teaches how to calibrate prior to use. Why is the Examiner assuming that it must be inherent for the calibration to require simulating the response of a radiation detector?

The Bronson reference (U.S. Patent No. 6,228,664 B1) cited by the Examiner as a secondary reference teaches a method of calibrating detectors which does not use radioactive sources. In fact, Bronson discloses a calibration method for radiation spectroscopy and does not teach or suggest a method for simulating a response to a radiation detector. The Examiner has erroneously concluded that Bronson teaches a method for simulating a response to a radiation detector. This conclusion is baffling and is without any support in the Bronson reference.

The significance of applicant's process for simulating a response of a radiation detector is based upon the last step in claim 16 in which a computer is used to develop a simulated response to a radiation detector based upon using the detection

characteristics and the operating characteristics of the received radiation from the earlier steps. Bronson, et al does not teach such a method nor does he suggest such a method. The Examiner refers to column 6, lines 21-57 in Bronson, et al as teaching "the step of correcting the simulated response using the detector response". In column 6, paragraphs 9, 10 and 11 which correspond to lines 2-33 in Bronson, equations and formulas are taught to simulate a wide variety of common shapes such as boxes, cylinders, etc. as input of the necessary parameters for computing points of location and dimensions of the detector with respect to an object. This has nothing to do with calibrating the detector and correcting the simulated response using the detector as suggested by the Examiner nor does it have any relation to the step in claim 16 of developing the simulated response on a radiation detector. Applicant believes the Examiner is completely misreading the teaching of Bronson, et al which does not teach a method for developing the simulated response to a radiation detector. There is no basis for the conclusion of the Examiner based upon the teaching of the references. Accordingly, the rejection of claims 16-18 and 20-23 as being obvious in view of the teaching of Ahmed, et al and Schoenig, et al in connection with Bronson, et al should be withdrawn. It should further be pointed out that the Examiner has failed to explain how the method taught by Ahmed for gamma scanning a nuclear fuel rod could be used in combination with the method for radiation spectroscopy taught in Bronson or how the method of testing of nuclear fuel rods in Schoenig could be combined with the method for radiation spectroscopy in Bronson to simulate the response of a radiation detector. The rejection of the Examiner does not satisfy the statutory requirement of 35 USC 103 in that the Examiner has not demonstrated where the references support his conclusions. Accordingly, this rejection under 35 US C103 is fundamentally flawed and should be withdrawn.

The rejection of claim 19 under 35 USC 103(a) as being unpatentable over Ahmed in view of Bronson is respectfully traversed.

Claim 19 is dependent upon claim 16. As explained earlier in connection with claim 16, Ahmed merely discloses a method for passively gamma scanning a nuclear fuel rod and makes no mention or suggestion of how to simulate the response to a radiation detector. The Examiner's conclusion is based on an assumption from the reference without support and therefore has no validity.

Reconsideration and allowance of claims 16-23 is respectfully solicited.

Respectfully submitted,

Eugene Lieberstein
Reg. No. 24,645

ANDERSON, KILL & OLICK
1251 Avenue of the Americas
New York, New York 10020-1182
(212) 278-1000

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited in the U.S. Postal Service, addressed: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, MAIL STOP RCE, on April 26, 2006.

Signed: _____

Dated: April 26, 2006